Investigation of the Saturated Vapour Tensions of Thallium Selenides

value of the vapour pressure was similar to that of Tl_2Se when Tl was used as a tracer. From further measurements it was shown that dissociation occurs as follows:

$$Tl_2Se_3 \rightleftarrows Tl_2Se + 2Se .$$

A calculation of the heat of sublimation for the compounds gave the results: Tl_2Se 26.90 kcal/g.mol; TlSe 30.84 kcal/g.mol and Tl_2Se_3 33.97 kcal/g.mol.

There are 1 figure and 6 Soviet references.

ASSOCIATION: Institut fiziki AN Azerb. SSR
(Institute of Physics of the Ac.Sc., Azerbaidzhan SSR)

SUBMITTED: May 13, 1959

Card 2/2

ABDULLAYEV, G.B., SHAKHTAKHTINSKIY, M.G., KULIYEV, A.A.

Studying the elasticity of saturated vapors of the system Se - Te. Dokl.AN Azerb.SSR 16 no.3:219-222 '60. (MIRA 13:7)

1. Institut fiziki AN AzerSSR.
(Selenium) (Tellurium)

S/137/62/000/002/001/1
A006/A101

AUTHORS: Shakhtakhtinskiy, M. G., Kuliyev, A. A., Abdullayev, G. B

TITLE: Investigating the tension of saturated vapors of some selenides by the radio-isotope method

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 5, abstract 2A20 (V sb. "Vopr. metallurgii i fiz. poluprovodnikov", Moscow, AN SSSR, 1961, 38-42)

TEXT: The investigation was carried out by the Knudsen method. A schematic diagram of the device is given. With the aid of this device it is possible to determine the vapor tension at various temperatures without disturbing the vacuum. For a synthesis of selenides, Se, Tl and Sb of 99.99% purity were placed into a quartz ampoule which was evacuated to 10^{-4} mm Hg. Each compound was prepared twice with active Se^{75}, Tl^{204} or Sb^{124}. Vapor tensions of compounds TlSe, Tl_2Se and Sb_2Se_3, measured over both components, have equal values, i.e. during evaporation of these substances, there is no dissociation in the solid phase. The same agreement of values is observed for Tl_2Se up to 200°C. It is supposed that Tl_2Se_3 dissociates according to the scheme $Tl_2Se_3 \rightarrow Tl_2Se\uparrow + 2Se$

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Vapor tension p as a function of temperature T is described by the following equations: for Tl_2Se lgp = - (5880.9/T)+ 9.8052; for TlSe lgp = -(6742.2/T) + 12.443; for Tl_2Se_3 lgp = -(7425.5/T) + 9.2481; for Sb_2Se_3 lgp = -(6432.3/T) + 8.7906. Calculation of sublimation heats for the aforementioned compounds yields the following values in kcal/g-mole: Tl_2Se 26.905; TlSe 30.845; Tl_2Se_3 33.972, Sb_2Se_3 29.589.

T. Kolesnikova

[Abstracter's note: Complete translation]

43134
S/181/62/004/011/038/049
B108/B186

AUTHORS: Ibragimov, N. I., Shakhtakhtinskiy, M. G., and Kuliyev, A. A.

TITLE: Diffusion and electrical transfer of thallium in tellurium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3321-3325

TEXT: Purified tellurium powder was pressed into the shape of little cylinders which then were sintered at 420-430°C. Other specimens to be tested were single crystals grown along the C crystal axis from purified tellurium. The tracer isotope Tl-204 was applied to one polished side of each specimen, after which pairs of specimens were formed by sticking these sides together. Direct current of 30-40 a/cm^2 was sent across the joints in transfer experiments. After diffusion and annealing (10-300 hrs) thin successive layers were removed from the specimens to determine the thallium concentration. The tests were made at temperatures of from 430 to 360°C. The diffusion coefficient for thallium in tellurium was found to be

$D_{polycryst.} = 3.2 \cdot 10^2 \exp(-41.0/RT) cm^2/sec$

$D_{\perp C} = 8.5 \cdot 10^{11} \exp(-73.1/RT) cm^2/sec$

Card 1/2

Diffusion and electrical transfer ...

$D_C = 1.8 \cdot 10^{16} \exp(-84.4/RT) cm^2/sec.$

Within the temperature range in question, p-type conductivity is dominant in tellurium. Probably thallium diffusion in tellurium takes the form of positive ions. Entrainment of the thallium ions by holes in tellurium was observed. This effect becomes more intense as temperature increases. There are 2 figures and 1 table.

ASSOCIATION: Institut fiziki AN AzSSR, Baku (Physics Institute AS AzSSR, Baku)

SUBMITTED: May 28, 1962 (initially); July 15, 1962 (after revision)

Card 2/2

S/181/63/005/003/023/046
B102/B180

AUTHORS: Ibragimov, N. U., Shakhtakhtinskiy, M. G., and Kuliyev, A. A.

TITLE: Effect of an electric field on thallium diffusion in germanium single crystals

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 862-864

TEXT: Own and foreign results on thallium thermodiffusion in the presence of a constant electric field are discussed. Measurements were made with Ge single crystals 10·5·6 mm^3 in size with ~30 ohm·cm in the temperature range 910-800°C (±5°). Diffusion times were 12 to 200 hrs, and Tl^{204} was used as a tracer. The effective ion mobility B^* and the effective charge Z^* were determined, the latter from the resultant force $F = eE(Z+n\lambda\sigma)=Z^*eE$, λ being the mean free path and σ the electron-ion scattering cross section ($\sigma \sim 10^{-12}$-10^{-13} cm^2). The thallium migration toward the anode in fields of 0.4 - 0.7 v/cm showed definite temperature dependence for the effective charge:

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T, ^{o}K	Z , e	B, $cm^2/v \cdot sec$
1180	100	$4.8 \cdot 10^{-9}$
1120	32	$2.7 \cdot 10^{-10}$
1070	12	$1.8 \cdot 10^{-11}$

This can be attributed to entrainment of the thallium ions by the germanium conduction electrons.

There are 1 figure and 1 table.

ASSOCIATION: Institut fiziki AN AzSSR, Baku (Institute of Physics AS AzSSR, Baku)

SUBMITTED: October 19, 1962

Card 2/2

SHAKHTAKHTINSKIY, M.G.

Use of radioisotopes in studying the saturated vapors of certain semiconductors. Trudy Inst. fiz. AN Azerb. SSR 11:52-107 '63. (MIRA 16:4)

(Semiconductors) (Radioisotopes)

ACCESSION NR: AR4041540 S/0137/64/000/004/I001/I001

SOURCE: Ref. zh. Metallurgiya, Abs. 4I2

AUTHOR: Abdullayev, G. B.; Movlanov, Sh.; Shakhtakhtinskiy, M. G.; Kuliyev, A. A.

TITLE: Investigation of solubility of selenium and mercury in solid tellurium and their influence on electrical properties of tellurium

CITED SOURCE: Izv. AN TadzhSSR. Otd. geol.-khim. i tekhn. n., no. 2 (11), 1963, 13-22

TOPIC TAGS: selenium, mercury, tellurium, solubility, electrical property, retrogradation, electrical conductivity

TRANSLATION: Studies solubility of Se in Te (in interval 320-400°) and Hg in Te (in intervals 270-440°). Solubility of Hg in Te increases with increase of temperature and attains maximum (4.10^{20} atoms per cubic centimeter) at 370°

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ACCESSION NR: AR4041540

and then drops, and at 440° becomes equal to 1.10^{20} atoms per cubic centimeter. Solubility of Se in Te is greater than solubility of Hg in Te. In temperature dependence of solubility of Hg in Te there is observed retrogradation, which is absent in the system Te--Se . There are measured electrical conductivity of alloys Te-Se and Te-Hg in interval from -190° to -150° and the Hall effect at liquid nitrogen and room temperatures. It is found that Hg with a content of ~1% significantly increases electrical conductivity of Te, and Se almost does not change it. Bibliography: 24 references.

SUB CODE: IC, GC ENCL: 00

Card 2/2

L 2790-66 EWT(m)/T/EWP(b)/EWP(b)/EWA(c) LJP(c) JD

ACCESSION NR: AP5022247 UR/0363/65/001/007/1021/1024 43
546.86'191-165:536.495 42
B

AUTHOR: Abrikosov, N. Kh.; Tomtiyev, D.; Shakhtakhtinskiy, M. G.; Kuliyev, A. A.

TITLE: Thermoelectric properties of antimony-arsenic solid solutions

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1021-1024

TOPIC TAGS: thermoelectromotive force, solid solution, antimony alloy, arsenic, bismuth alloy, electric conductivity, thermoelectric property

ABSTRACT: Antimony-arsenic solid solutions containing up to 19.5% As, prepared from the elements, were used to grow single crystals, whose electrical conductivity σ, thermo-emf (α), and Hall emf were measured. At room temperature, both σ and α decrease with rising arsenic concentration. Since in the Sb-As system the carrier concentration is virtually independent of composition, the drop in σ is due to a decrease in the carrier mobility, which in turn is caused by the distortion of the lattice by the arsenic. In contrast to Bi-Sb solutions, Sb-As solutions were found to have no magnetoresistance at low magnetic field strengths. In the 100-300K temperature range, the thermo-emf rises with the temperature in both pure antimony and the solid solutions, hole conduction being preserved. In

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L 2790-66
ACCESSION NR: AP5022247

contrast to the Bi-Sb system, no semiconducting properties are displayed by the Sb-As system down to the liquid nitrogen temperature; this difference may be due to the greater overlapping of the bands of arsenic and antimony, which may also account for the metallic nature of the conductivity in the temperature range studied. Orig. art. has: 5 figures.

ASSOCIATION: Institut fiziki Akademii nauk Azerb. SSR (Institute of Physics, Academy of Sciences, Azerb. SSR)

SUBMITTED: 06Feb65 ENCL: 00 SUB CODE: SS, IC

NO REF SOV: 005 OTHER: 005

BVK
Card 2/2

L 5083-66 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD

ACC NR: AP5024563 UR/0070/65/010/005/0751/0754

548.5

AUTHOR: Tairov, S.I.; Tagirov, V.I.; Shakhtakhtinskiy, M.G.; Kuliyev, A.A.

TITLE: Preparation of single-crystal germanium-silicon alloys

SOURCE: Kristallografiya, v. 10, no. 5, 1965, 751-754

TOPIC TAGS: single crystal growing, germanium alloy, silicon alloy

ABSTRACT: The purpose of the work was to obtain homogeneous single crystals of a germanium-silicon alloy containing 15 at .% silicon, inasmuch as a pronounced change in the physical properties of Ge-Si alloys is observed in this region. Experiments showed that without a single-crystal seed of the alloy itself, single crystals of the Ge-Si system could be obtained only at extremely slow pulling rates which are very difficult to achieve in practice. The main difficulty, in addition to liquation, is the lack of a suitable seed. Single crystals of the Ge-Si alloy containing 15 at .% Si were grown by using a single-crystal seed of this alloy, and liquation was eliminated by selecting the melt composition in accordance with the composition of the grown solid phase based on the phase diagram, and by growing the crystal at a slow rate. The homogeneity of the sample was achieved by keeping the content of the melt constant. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki AN Azerb. SSR (Institute of Physics, AN Azerb. SSR)

SUBMITTED: 09Feb65 ENCL: 00 SUB CODE: SS, MM

NO REF SOV: 006 OTHER: 004

Card 1/1

0901 0198

ACC NR: AP6033269 SOURCE CODE: UR/0020/66/170/004/0822/0824

AUTHOR: Davzhanov, Kh.; Shakhtakhtinskiy, M. G.; Tagirov, V. I.; Aliyeva, B. S.; Shilkin, A. I.; Kuliyev, A. A.

ORG: Institute of Physics, Academy of Sciences, AzerbSSR)

TITLE: High temperature inversion of the Hall coefficient in tellurium

SOURCE: AN SSSR. Doklady, v. 170, no. 4, 1966, 822-824

TOPIC TAGS: tellurium, Hall coefficient, temperature dependence, energy band structure, impurity conductivity

ABSTRACT: To obtain more information on the band structure and on the mechanism of impurity conductivity of tellurium, the authors measured the electric conductivity and the Hall coefficient of tellurium doped with thallium. In view of the low solubility of thallium in tellurium, the impurity concentration was determined by a radioactive tracer method. The apparatus and technique used to grow the tellurium single crystals were described elsewhere (Pribory i tekhn. experimenta no. 5, 172, 1961). The measurements were made by a standard method in the temperature interval 77 - 530K, both in the direction of the principal axis of the crystal and perpendicular to it. The results show that the Hall coefficient is independent of the direction of the crystallographic axes, but the electric conductivity is. In spite of the similarity between selenium and tellurium in structure, thallium has a different effect on the electric properties of tellurium than of selenium. The admixture of thallium greatly

Card 1/2 UDC: 539.293: 537

ACC NR: AP6033269

increases the electric conductivity of the tellurium, which remains of the p-type regardless of the thallium content. With increasing thallium content, the low temperature inversion point of the Hall coefficient shifts toward higher temperatures. The high temperature inversion point is shifted toward lower temperatures with increasing thallium concentration. A table of inversion temperatures as functions of the concentration is included. Although the number of holes per thallium atom is on the average 0.5, this still does not mean that the thallium atoms are direct acceptors in the tellurium lattice. The change in the second inversion point of the Hall coefficient of tellurium can be attributed either to the deformation of the energy band during the alloying of tellurium by thallium, or to the change of the density of states in the energy band. This report was presented by Academician N. P. Sazhin 10 January 1966. Orig. art. has: 2 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 04Jan66/ ORIG REF: 005/ OTH REF: 005

Card 2/2

SHAKHTAKHTINSKIY, T.N.

Thermal cracking of heavy asphalt residues. F. Nagiev and T. N. Shakhtakhtinskii. *Izvest. Akad. Nauk Azerbaidzhan. S.S.R.* 1956, No. 1, 3-21 (in Russian). Comparative cracking expts. were carried out on three feed stocks for 20-50 min. at 420-5°, and 3 atm. pressure. The feed stocks used were heavy fuel oil, the propane-propylene deasphaltized residue from low-temp. cracking of heavy fuel oil, and the same residue after deasphaltizing with the liquefied butane-propane fraction of natural gas. M. Z.

SHAKHTAKHTINSKIY, T. N.

The development of theories of recycling processes. M. F. Nagiev, T. N. Shakhtakhtinskii, and P. V. Karamzin. *Izvest. Akad. Nauk Azerbaidzhan S.S.R.* 1956, No. 12, 23–33 (in Russian); cf. *Doklady Akad. Nauk Azerbaidzhan S.S.R.* 2, No. 8 (1946).—Derived equations are given for the overall material balance of complex and interconnected chem. processes and for the detn. of the total charge or charges of separate components for each reactor or series of reactors. Two groups of processes are distinguished in org. synthesis and in the petroleum industry. In the first group are processes where changes of the compn. of raw materials change only the yield of products. Processes of the second type are those in which the presence of a definite number of components is required. —M. Charmandarian

SHAKHTAKHTINSKIY, T. N.

20-3-43/59

AUTHORS: Nagiyev, M.F., Member of the Academy of Sciences of the Azerbaydzhan SSR, Shakhtakhtinskiy, T.N., Karamzin, P.V.

TITLE: Development of the Theory of Recirculation Processes (Razvitiye teorii retsirkulyatsionnykh protsessov)

PERIODICAL: Doklady Akad.Nauk SSSR, 1957, Vol. 115, Nr 3, pp.576-579 (USSR)

ABSTRACT: The method of calculation proposed here develops the theory of recirculation and makes possible an evaluation of the efficiency of an arbitrary complex chemical processing of raw materials not only within one single plant, but within the framework of different chemical processes which are tied together. The most general scheme represents a system of closely connected complex chemical processes. (See fig 1). Into this scheme quantities $g_{10}, g_{20} \ldots g_{\nu 0} \ldots g_{m0}$ are introduced, denoting charges $1,2 \ldots \ldots, \nu, \ldots m$ of the reactors with an independent (prescribed) amount of raw material, and $g_{1'0}$, $g_{2'0} \ldots \ldots g_{\nu'0} \ldots g_{m'0}$ denoting charges of the reactors with dependent amounts of raw material. The independent and the dependent reactor charges with fresh raw material consist of the following mixture of components.

$$g_{\nu 0} = \sum g_{\nu' 0 i_\nu}, \qquad g_{\nu'0} = \sum g_{\nu' 0 i_\nu}, \qquad (1)$$

$i_\nu = A_\nu, B_\nu, C_\nu \ldots;$
$\nu = 1,2 \ldots m;$

The author arrives at a system of equations and solves it by dividing the system into two parts. After the total charges have been

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Development of the Theory of Recirculation Processes. 20-3-43/59

cannot be known beforehand, because the amount of all the recirculant substances entering a reactor is unknown. If the variant computed appears to be undesired, the fresh supply of other components must be set equal to zero and the problem must be solved as many times until the desired variant has been found. In general the recirculants must not be carried away, but the desired composition should be obtained by an addition of the missing components from outside. Very often it can be immediately found, which component in each reactor of a dependent system possesses a fresh supply, which equals zero. There are 2 Slavic references and 1 figure.

ASSOCIATION: Petroleum Institute of the AN Azerbaydzhan SSR (Institut nefti AN AzerbSSR)

SUBMITTED: February 11, 1957

AVAILABLE: Library of Congress.

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SHAKHTAKHTINSKIY, T. N

11(4);5(3) PHASE I BOOK EXPLOITATION SOV/2624

Topchiyev, Aleksandr Vasil'yevich, Murtuza Fatullayevich Nagiyev, and Togrul Neymat ogly Shakhtakhtinskiy

Znacheniye nefti v proizvodstve sovremennykh sinteticheskikh materialov (Importance of Petroleum in Production of Modern Synthetic Materials) Moscow, Izd-vo AN SSSR, 1959. 126 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) Errata slip inserted. 15,000 copies printed. Ed. of Publishing House: B. E. Davydov; Tech. Ed.: I. A. Makogonova.

PURPOSE: This booklet is intended for persons studying problems of petroleum conversion and production of petroleum chemicals.

COVERAGE: The booklet describes the development of petroleum chemical synthesis, the chemical composition of crudes, different methods of crude oil conversion to obtain such synthetic materials as plastics, synthetic rubber, synthetic fiber, synthetic washing agents, and various perfumes and drugs. Further, the booklet discusses the fundamentals of the chemistry of hydrocarbons and their derivatives, and describes different petroleum conversion processes, such as cracking, pyrolysis, platforming, dehydration, polymerization, etc., the by-products of which are used in industrial organic

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synthesis. Appendix contains numerous tables listing the characteristics of different hydrocarbons. There are 8 references, all Soviet.

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AVAILABLE: Library of Congress

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12/22/59

MAGIYEV, M.F.; SHAKHTATINSKIY, T.N.; KANDALOVA, V.D.; KNOPF, L.A.

Applying the theory of recirculation processes to the development of complete flow systems for the production of polymer compounds. Azerb.khim.zhur. no.1:3-10 '59.
(MIRA 13:6)

(Polymers)

NAGIYEV, M.F.; KARAMZIN, P.V.; SHAKHTAKHTINSKIY, T.N.

Laws of recycling processes in chemical technology. Azerb. khim.zhur. no.2:11-21 '60. (MIRA 14:8)
(Chemical reaction--Conditions and laws)
(Petroleum--Refining)

GADZHIYEV, T.A.; SHAKHTAKHTINSKIY, T.N.; KANDALOV, V.D., red.; RASHEVSKAYA, T.A., red. izd-va; AKHMEDOV, S., tekhn. red.

[Vinyl compounds] Vinilovye soedineniia. Baku, Azervaidzhanskoe gos. izd-vo, 1962. 269 p. (MIRA 15:9)
(Vinyl compounds

SHAKHTAKHTINSKIY, T.N.; ANDREYEV, L.V.

Condensation of pentaerythritol with carbonyl compounds in the presence of the KU-2 cation exchanger. Dokl. AN Azerb. SSR 18 no.12:17-22 '62. (MIRA 16:11)

1. Institut neftekhimicheskikh protessesov AN AzerbSSR. Predstavleno akademikom AN AzerSSR A.M. Kuliyevym.

SHAKHTAKHTINSKIY, T.N.; SHTEYNGEL', A.S., red.

[Aliphatic oxygen-containing monomers and polymers] Alifaticheskie kislorodsoderzhashchie monomery i polimery. Baku, Azerneshr, 1963. 150 p. (MIRA 17:5)

ALIYEV, A.A.; BUNIAT-ZADE, Z.A.; SHAKHTAKHTINSKIY, T.N., red.

[Oil and gas and their significance in the national economy] Neft' i gaz, ikh znachenie v narodnom khoziaistve. Baku, Azerneshr, 1964. 62 p. (MIRA 17:4)

L 37640-65 EPF(c)/EPR/EWP(j)/EWA(c)/EWT(m) Pc-4/Pr-4/Ps-4 RPL RM/WW

ACCESSION NR: AP5007803 S/0316/64/000/002/0079/0084

35
34
B

AUTHOR: Shakhtakhtinskiy, T. N.; Aliyeva, K. Ya.

TITLE: Oxidative ammonolysis of an alkane mixture as a method for preparing nitrile compounds

SOURCE: Azerbaydzhanskiy khimicheskiy zhurnal, no. 2, 1964, 79-84

TOPIC TAGS: nitrile synthesis, alkane ammonolysis, oxidative ammonolysis, gas chromatography, ammonolysis catalyst , metal oxide catalyst

ABSTRACT: Oxidative gas-phase ammonolysis of a mainly paraffinic hydrocarbon fraction of 65C final boiling point was studied experimentally under continuous flow conditions on a fluid bed of catalysts in order to select optimum catalysts and conditions for producing a maximum yield of nitriles. The fraction, containing 32.87 wt% n-pentane, 26.77 wt% isopentane, 16.21 wt% 2-methylpentane, 7.26 wt% cyclohexane and smaller amounts of mainly branched saturated C_6 hydrocarbons, was reacted at 1:41:11 naphtha-air-ammonia ratios and also with a pure oxygen-ammonia mixture at 300-500C, 1700 hr^{-1} velocity and a 2.5 second contact time with fluidized catalysts, and the product composition was determined by chemical analysis

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L 37640-65

ACCESSION NR: AP5007803

and gas chromatography. The concentration of gaseous products, condensate, NH_4OH, hexamethylene-tetramine and nitriles was determined. A 1:1 molar mixture of cobalt and molybdenum oxides, and 2% V_2O_5 and 16% MoO_3 on an 82% alumina support, were shown to give optimum results, whereas considerably smaller yields were produced on a mixture of Bi and Mo oxides on silica, as shown in Fig. 1 and 2 of the Enclosure. The optimum temperatures for producing maximum yields of nitriles by air-ammonolysis were 430C for the Co-Mo catalyst and 460C for the V-Mo catalyst. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 02 SUB CODE: OC

NO REF SOV: 000 OTHER: 000

Card 2/4

[illegible], [illegible]; [illegible], [illegible]; [illegible]KHTAKHTINSKIY, T.N.

[illegible] study of the dehydrochlorination of dichloroethane in order to obtain vinyl chloride in a reactor with a fluidized bed and ascending through-flow of a catalyst. Azerb. khim. zhur. no.3:44-50 '64. (MIRA 18:5)

SHAKHTAKHTINSKIY, F.N.; SHIK, G.

Certain regularities of the chlorination of ethylene in a fluid bed of aluminum γ-oxide catalyst. Azerb. khim. zhur. no.5: 43-47 '54. (MIRA 13:3)

L 60257-65 EPF(n)-2/EWT(m)/EWP(b)/T/EWP(t) Pr-4/Pu-4 IJP(c) JD/JG/WE

ACCESSION NR: AP5021065 UR/0316/64/000/004/0025/0028

32 B

AUTHOR: Shakhtakhtinskiy, T. N.; Aliyeva, K. Ya.; Kuliyeva, S. A.

TITLE: Oxidative ammonolysis of the head fraction of low octane gasoline in the boiling layer of cobalt-molybdenum and vanadium-molybdenum catalysts

SOURCE: Azerbaydzhanskiy khimicheskiy zhurnal, no. 4, 1964, 25-28

TOPIC TAGS: catalysis, ammonolysis, gasoline, cobalt compound, molybdenum compound, vanadium compound

Abstract: In a continuation of investigation on the selection of catalysts and influence of temperature on the oxidative ammonolysis of the head fraction (up to 65°C) of low-octane gasoline of a gas-condensate deposit for the production of aliphatic nitriles, the process was investigated on cobalt-molybdenum and vanadiummolybdenum catalysts (mixture of cobalt and molybdenum oxides in 1:1 molar ratio and mixture of vanadium and molybdenum oxides, applied on aluminum oxide: 2% V_2O_5, 16% MoO_3, 82% Al_2O_3). The influence of excess ammonia, oxygen, and contact time on the yield of nitriles in percent by weight of the gasoline passed through was studied. Optimum systems of the process were established: 1) for the coblat-molybdenum catalyst -- temperature 430°C; gasoline:air (oxygen):ammonia molar ratio 1:40 (8):30; contact

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L 60257-65

ACCESSION NR: AP5021065

time 2.5-7.7 sec; for the vanadium-molybdenum catalyst -- temperature 460°C; gasoline:air (oxygen):ammonia molar ratio 1:20(4):30; time of contact 5.1 sec. Orig. art. has 3 graphs and 2 tables.

ASSOCIATION: none

SUBMITTED: 00	ENCL: 00	SUB CODE: FP, GC
NO REF SOV: 001	OTHER: 000	JPRS

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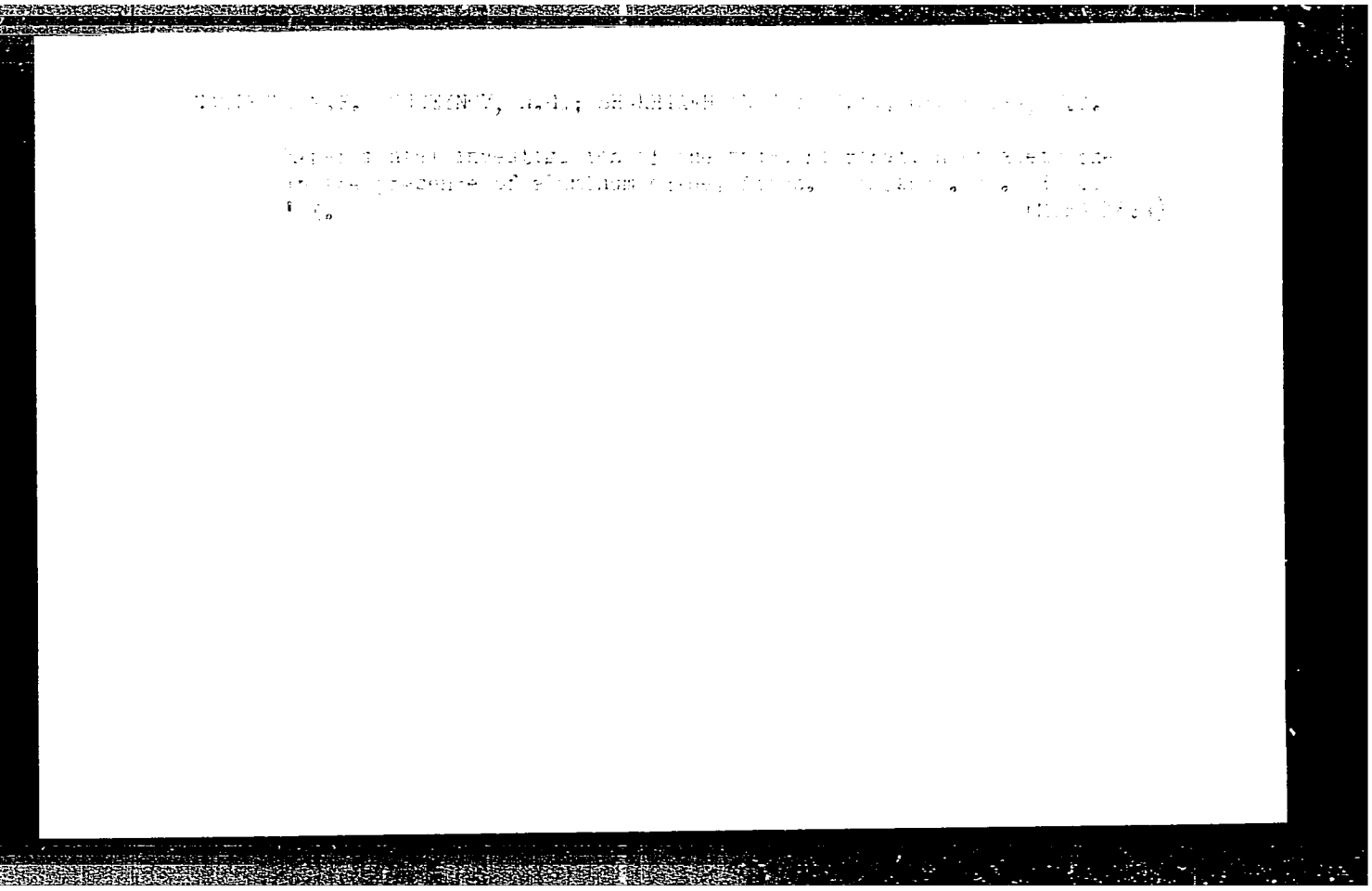

SHAKHTAKHTINSKIY, T.N.; SADYKHOVA, Kh.I.; GADZHIYEVA, Kh.M.

Production of maleic anhydride by catalytic oxidation of butylenes by air in the fluidized bed of the catalyst in a large pilot plant. Aze b. khim. zhur. no.3:80-83 '65.

1. Institut neftekhimicheskikh protsessov AN AzerSSR.

SHAKHTAKHTINSKIY, T.N.; SADYKHOVA, Kh.I.; FARBERG, Z.M.

Preparation of maleic anhydride by the catalytic oxidation of butylenes in a fluidized bed of a catalyst. Azerb. khim. zhur. no. 2:91-94 '65. (MIRA 18:12)

1. Institut neftekhimicheskikh protsessov AN AzerSSR. Submitted Sept. 10, 1964.

SHAKHTAR', P.S. inzhener.

Mechanizing coal loading into open railroad cars with a single control drive. Ugol' 32 no.6:29-31 Je '57. (MIRA 10:7)

1. Donetskiy ugol'nyy institut.
(Coal handling machinery) (Remote control)

SHAKHTAR', P.S., inzh.

Using self-dumping cars with streamlined train movements.
Shor.DonUGI no.17:114-119 '58. (MIRA 12:5)
(Mine railroads--Cars)

SHAKHTAR', P.S., inzh.

Use of drop-bottom mine cars. Ugol' 36 no.4:35-36 Ap '61.
(MIRA 14:5)

(Donets Basin--Mine railroads--Cars)

RENGEVICH, A.A., kand.tekhn.nauk; SHAKHTAR', P.S., inzh.; VOLOD'KO, K.P., inzh.; YUSHCHENKO, A.I., inzh.; GALUSHKO, M.K., kand.tekhn.nauk; KUZNETSOV, B.A., kand.tekhn.nauk; KUDELYA, G.Ya., inzh.; MEKHEDA, M.K., inzh.; OKHRIMCHUK, O.Kh., tekhnik

Causes of the breaking of axles of electric mine locomotives. Vop. rud. transp. no.6:192-203 '62. (MIRA 15:8)

1. Dnepropetrovskiy gornyy institut (for Rengevich, Kuznetsov, Kudelya, Mekheda, Okhrimchuk). 2. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Shakhtar', Galushko). 3. Aleksandrovskiy mashinostroitel'nyy zavod (for Volod'ko, Yushchenko).
(Mine railroads) (Axles--Testing)

L 7831-66 EWT(d)
ACC NR: AP5023116 SOURCE CODE: UR/0103/65/026/009/1563/1572

AUTHOR: Tikhonov, V. I. (Moscow); Shakhtarin, B. I. (Moscow) 28

ORG: none

TITLE: Statistical characteristics of the phase-type automatic frequency control

SOURCE: Avtomatika i telemekhanika, v. 26, no. 9, 1965, 1563-1572

TOPIC TAGS: automatic frequency control, synchronous reception

ABSTRACT: This is a continuation of an earlier author's work (Avt. i telemekhanika, v. 21, no. 3, 1960) where an approximate method of analyzing the phase AFC, operating under noise conditions, was developed. The present article develops approximate formulas for the average value, dispersion and number of phase jumps in the controlled oscillator for the case of nonzero initial detuning. It is found that the phase-difference probability-density curve is shifted and the

Card 1/2

UDC: 621.396.668

L 7831-66
ACC NR: AP5023116

phase-difference dispersion increases when the initial detuning increases. Also, the number of phase jumps, which characterizes a disturbance of the synchronous conditions in radio-reception systems, increases with decreasing signal-to-noise ratio. Several curves based on numerical calculations illustrate the theory. Orig. art. has: 8 figures and 65 formulas.

SUB CODE: 09 / SUBM DATE: 22Sep64 / ORIG REF: 006 / OTH REF: 004

Card 2/2 bjp

L 47598-66

ACC NR: AP6032288 SOURCE:CODE: UR/0106/66/000/009/0018/0023

29
B

AUTHOR: Shakhtarin, B. I.; Shchepkin, Yu. N.

ORG: none

TITLE: An experimental study of fluctuation noise effects on phase-lock frequency control

SOURCE: Elektrosvyaz', no. 9, 1966, 18-23

TOPIC TAGS: frequency control, phase measurement, PHASE SHIFT ANALYSIS

ABSTRACT: An experimental method for determining the error signal probability density and correlation coefficient caused by fluctuation noise in a phase-lock frequency control system is described. An experimental set-up measures error signal distribution, occurrence frequency of phase jitter, the mean fluctuation frequency of the error signal, and jitter time duration. A digital phase meter with linear characteristics of $-\pi$—$+\pi$ radians with a recorder of random phase disturbance is part of the setup; it consists of a delay circuit, a sawtooth generator, and an oscillograph. The delay circuit, driven by pulses derived from a reference oscillator, controls the input to the sawtooth generator. The output of the sawtooth generator is fed to the vertical input of the oscillograph. A second output from the reference oscillator is fed into the horizontal input of the oscillograph through the phase-lock system and a pulse-shaping circuit. The error signal is displayed on the oscillo-

UDC: 621.396.668

Card 1/2

ACC NR: AP6032288

graph under various signal to noise conditions, and phase jitter can be observed and recorded. A second circuit, used for phase jitter duration measurements, has a coincidence circuit that compares two signals, one derived directly from a reference oscillator and the other derived from the reference oscillator and passed through the phase-lock circuit. The coincidence circuit detects phase shifts and initiates an output which lasts until phase coincidence between the two inputs is restored. The method is highly accurate. Orig. art. has: 9 figures and 2 formulas. [IV]

SUB CODE: 14/ SUBM DATE: 10Sep65/ ORIG REF: 008/ OTH REF: 001/ ATD PRESS: 5092

Card 2/2

ACC NR: AP6027914 SOURCE CODE: UR/0105/66/000/006/0049/0051

AUTHOR: Kazovskiy, Ye. Ya. (Doctor of technical sciences); Shakhtarin, V. N. (Engineer); Boltukhova, S. N. (Engineer; Leningrad); Mikhaylov, N. N. (Engineer; Moscow)

ORG: none

TITLE: Study of a superconductive magnetic system with no steel core

SOURCE: Elektrichestvo, no. 6, 1966, 49-51

TOPIC TAGS: magnetic coil design, superconductivity, uniform field generation, liquid helium temperature testing, inductance testing method, ferromagnetic superconductivity

ABSTRACT: The article discusses the results of a number of tests on a magnetic superconductive coil system without central iron feed core performed for the purpose of investigating field behavior and distribution patterns and determining optimum system configuration and geometric dimensioning. An analysis was made of magnetic fields generated by a current flowing in two square coaxial coils with their frontal sections bent back. The analysis was performed by the force imposition technique, on the assumption of an infinitely small coil section and on the further supposition that this section is located in the geometric center of the coil cross section. Coils were designed using superconductive wire, 0.25 mm in diameter, of 65BT alloy. The feed system

 UDC: 621.3.042.13:537.312.62

ACC NR: AP6027914

for a set of superconductive coils was experimentally tested by means of a heat shunt cross coupled with the coil center, and similar coils were also checked at the temperature of liquid helium with a current density up 468 A/mm^2 and an inductance of 0.785 Th. Pertinent mathematical formulas are derived and results are analyzed in the light of proper coil design for the production of a uniform field. Good agreement is found between the rated and the experimental magnetic field induction, thus substantiating the accuracy of the formulas and the validity of their method of substituting an infinitely thin turn passing through the geometric center of the coil cross section when analyzing a superconductive coil system of the geometry considered. The authors wish to express their gratitude to N. Ye. Alekseyevskiy for his valuable commentary and help in this study. Orig. art. has: 7 formulas and 3 figures.

SUB CODE: 20/ SUBM DATE: 18May65/ ORIG REF: 001/ OTH REF: 001

Card 2/2

S/0292/64/000/009/0008/0014

ACCESSION NR: AP4045176

AUTHORS: Kazovskiy, Ye. Ya. (Doctor of technical sciences); Danilevich, Ya. B. (Candidate of technical sciences); Shakhtarin, V. N. (Engineer)

TITLE: Prospects for producing high-power magnetohydrodynamic generators

SOURCE: Elektrotekhnika, no. 9, 1964, 8-14

TOPIC TAGS: MHD, conducting gas, magnetic field, Hall effect, current intensity, seeded gas

ABSTRACT: Basic problems associated with the generation and utilization of MHD power were reviewed, and the theory of the MHD generator is outlined briefly. A simplified expression is obtained for the power output P from one-dimensional MHD considerations $P = \sigma B^2 w^2 \eta(1-\eta)$, where η is the loading parameter. Alkali metals are shown to possess a maximum ionization rate at minimum temperatures (2300-3300K). Both constant current and variable current generators are reviewed. The conduction type is shown to be more practical in the near future as opposed to the pulsed generator. The schematic of an open-cycle MHD power plant is given, and the details of the various components are outlined. The one-dimensional MHD theory for an ideal, conducting gas flow is treated in greater detail and mass, momentum, and

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ACCESSION NR: AP4045176

energy conservation equations are obtained in a differential form. The effects of Hall currents, boundary losses, end losses, and magnetic losses are mentioned, and segmented electrodes are suggested to minimize some of these losses--especially the Hall currents. A set of efficiency expressions is obtained, including electrical efficiency, thermodynamic efficiency, and power efficiency. A long list of materials suitable for withstanding high-temperature corrosive atmospheres is presented (tantalum and zirconium carbides, refractory materials, etc). The experimental prototype designed at AVCO Research Center, Mass., USA is reviewed, and recommendations are made for a 500 megawatt power plant utilizing a combined nuclear reactor and an MHD generator. Orig. art. has: 20 formulas, 10 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 021

Card 2/

L 01223-66 EWP(m)/EPA(w)-2/EWP(z)/EWT(l)/EWT(m)/T-2/EWP(b)/EPA(sp)-2/EWA(m)-2/EWA(d)/EWP(t) IJP(c) JD

ACCESSION NR: AP5016664 UR/0382/65/000/002/0151/0158
621.3.044.2

AUTHOR: Shakhtarin, V. N.

TITLE: Investigation of dc electromagnets with iron cores in MHD generator applications

SOURCE: Magnitnaya gidrodinamika, no. 2, 1965, 151-158

TOPIC TAGS: MHD generator, electromagnet, magnet, magnetic field intensity

ABSTRACT: Methods and results to determine leakage coefficients in iron-core electromagnets are presented. Two forms of iron cores, C and E types, are considered in detail. Graphical magnetization results are given for both types of magnets with rectangular cross section of the pole faces. Also, using the analogy between two-dimensional electric potential on a resistive sheet and the two dimensional magnetic vector potential, a method for determining leakage coefficients is described. The resistive-paper method results are then compared with test measurements for the two types of magnets and show good agreement. The method is recommended, together with some detailed instructions, for design of electromagnets for MHD generators. Orig.

Card 1/2

L 01223-66
ACCESSION NR: AP5016664

art. has: 5 figures, 4 tables.

ASSOCIATION: none

SUBMITTED: 04Jan65 ENCL: 00 SUB CODE: EM, ME

NO REF SOV: 002 OTHER: 001

Card 2/2

L 45514-66 EWT(1)/T-2 IJP(c) AT/GD
ACC NR: AT6016822 (A) SOURCE CODE: UR/0000/65/000/000/0215/0225

AUTHOR: Shakhtarin, V. N.; Boltukhova, S. N.

69
B+1

ORG: none

TITLE: Large-capacity MHD generators using fuel-combustion products

SOURCE: AN SSSR. Institut elektromekhaniki. Teoriya, raschet i issledovaniye vysokoispol'zovannykh elektricheskikh mashin (Theory, design, and research of electrical machinery in constant use). Moscow, Izd-vo Nauka, 1965, 215-225

TOPIC TAGS: MHD flow, MHD generator, gas flow, ideal gas

ABSTRACT: Fundamental design calculations for a 1000-Mw MHD generator are presented: channel shape and length, magnetic-system data, generator weight, and size. A set of equations describing the flow of ideal gas in a variable-cross-section channel is used to deduce formulas for generator operating parameters. Distribution of temperature, pressure, cross-section, and load parameter (electrical efficiency) along the channel is estimated for two versions: (1) Constant

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L 45514-66
ACC NR: AT6016822

gas conductivity, 30 mhos/m and (2) Gas conductivity $\sigma = c\frac{T^{3/4}}{p^{1/2}}$; other data taken from S. Way and S. M. De Carso's paper (Trans. ASME, 1961, 83, no. 4, Ser. A, 397). Magnetic systems are calculated in two versions: (1) Steel-core system with a total steel-copper weight of 7.73 to 9.39 kg/kw; (2) Ironless coil system with deep cooling (A. Taylor et al., Proc. Intern. Conf. High Mag. Fields, 1-4 Nov 61, NY 1962; Klein, Symposium MHD Pwr. Generation, N. Castle, 6-8 Sep 62). Orig. art. has: 3 figures, 40 formulas, and 4 tables.

SUB CODE: 09,20/ SUBM DATE: 04Aug65 / ORIG REF: 003 / OTH REF: 003

Card 2/2 hs

DEDIKOV, M.; SHAKHTARIN, Yu.; DUGINA, N.A., tekhnicheskiy redaktor

[Mechanization in industry; work practice of the Sverdlovsk loading and conveying machinery plant] Mekhanizatsiia proizvodstva; iz opyta sverdlovskogo zavoda transportnogo mashinostroeniia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 23 p. [Microfilm] (MLRA 8:2)
(Machinery in industry)

KASHARSKIY, Engmar Grigor'yevich, nauchnyy sotrudnik; SHAKHTARIN, Valentin Nikolayevich, nauchnyy sotrudnik

Results of the measurement of losses in an experimental determination of the stray reactance of a turbogenerator with removed rotor. Izv. vys. ucheb. zav.; elektromekh. 4 no.12:110-116 '61. (MIRA 15:1)

1. Institut elektromekhaniki AN SSSR.
(Turbogenerators)

SHAKHTARIN, Yu.S.

DEDIKOV, M.F.; SHAKHTARIN, Yu.S.; DUGINA, N.A., tekhnicheskiy redaktor

[In the fight for a progressive section; from the work practice of the Sverdlovsk Transport] V bor'be za peredovoi uchastok; iz opyta raboty Sverdlovskogo zavoda transportnogo mashinostroeniia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry, 1954. 29 p. (Machinery industry) (MLRA 8:4)

Mathematical Reviews
Vol. 14 No. 9
October 1953
Geometry

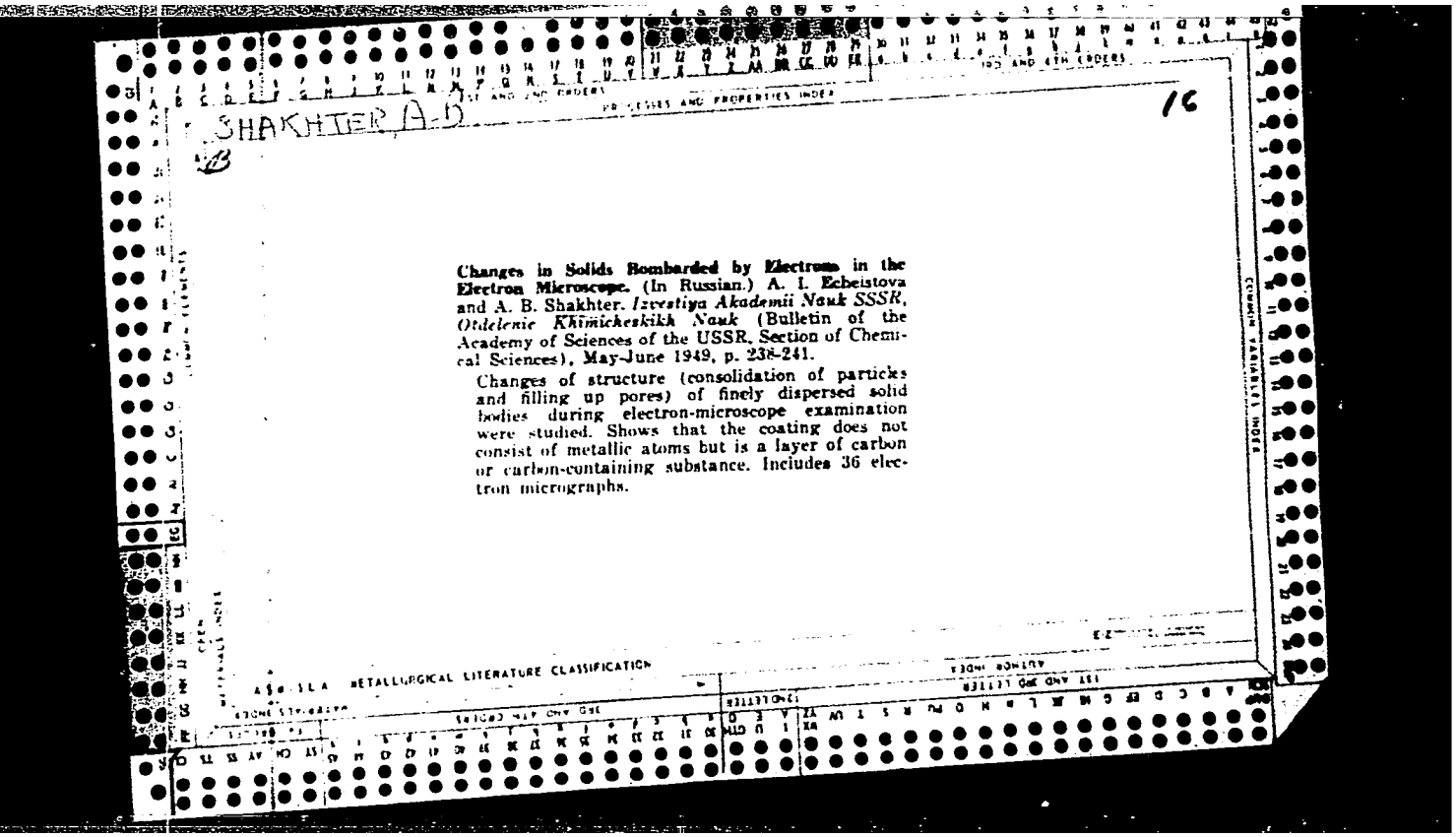
Čahtauri, A. I. On projective bending of a plane net. Soobščeniya Akad. Nauk Gruzin. SSR 11, 531-532 (1950). (Russian)

If $x^\alpha = x^\alpha(u^1, u^2)$, $a_{ij}du^i du^j = 0$ define a plane net, they determine an affine connection Γ^m_{ij}. It is shown that if there are two such nets, projectively deformable into one another, it is necessary and sufficient that

$$\bar{\Gamma}^m_{ij} = \Gamma^m_{ij} + p_i\delta^m_j + p_j\delta^m_i + \mu^m a_{ij}.$$

The author proves that if the two nets form a configuration of Laplace, $\mu^m = -\bar{a}^{ms}p_s$, where p_s is a gradient.

M. S. Knebelman (Pullman, Wash.).



SHAKHTER, A.B.

16

Changes in Solids Bombarded by Electrons in the Electron Microscope. (In Russian.) A. I. Echeistova and A. B. Shakhter. *Izvestiya Akademii Nauk SSSR, Otdelenie Khimicheskikh Nauk* (Bulletin of the Academy of Sciences of the USSR, Section of Chemical Sciences), May-June 1949, p. 238-241.

Changes of structure (consolidation of particles and filling up pores) of finely dispersed solid bodies during electron-microscope examination were studied. Shows that the coating does not consist of metallic atoms but is a layer of carbon or carbon-containing substance. Includes 36 electron micrographs.

EXCERPTA MEDICA Sec.16 Vol.13/5 Cancer May 1960

2045. *Difficulties and mistakes in roentgen diagnosis of lung cancer (Russian text)* SHAKHTER I. A. Centr. Roentgenol. and Radiol. Inst., Moscow *Vop. Onkol.* 1957, 3/5 (589-595) Illus. 4

Out of 208 cases submitted to thoracotomy there were 26 faulty radiological diagnoses (12.5%). In 18 cases a pathological process had been mistaken for cancer, and in 8 cases some other disease (bronchiectasis, cysts, tuberculoma) had been diagnosed as cancer.

SHAKHTIN, D.M.

USSR/Chemical Technology. Chemical Products and their Application. J-12
Glass. Ceramics. Building Materials.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27712.

Author : I. Ye. Dudavskiy, D.M. Shakhtin.
Inst :
Title : Electric Kryptol Muffle Furnace.

Orig Pub: Ogneupory, 1955, No 4, 182-183.

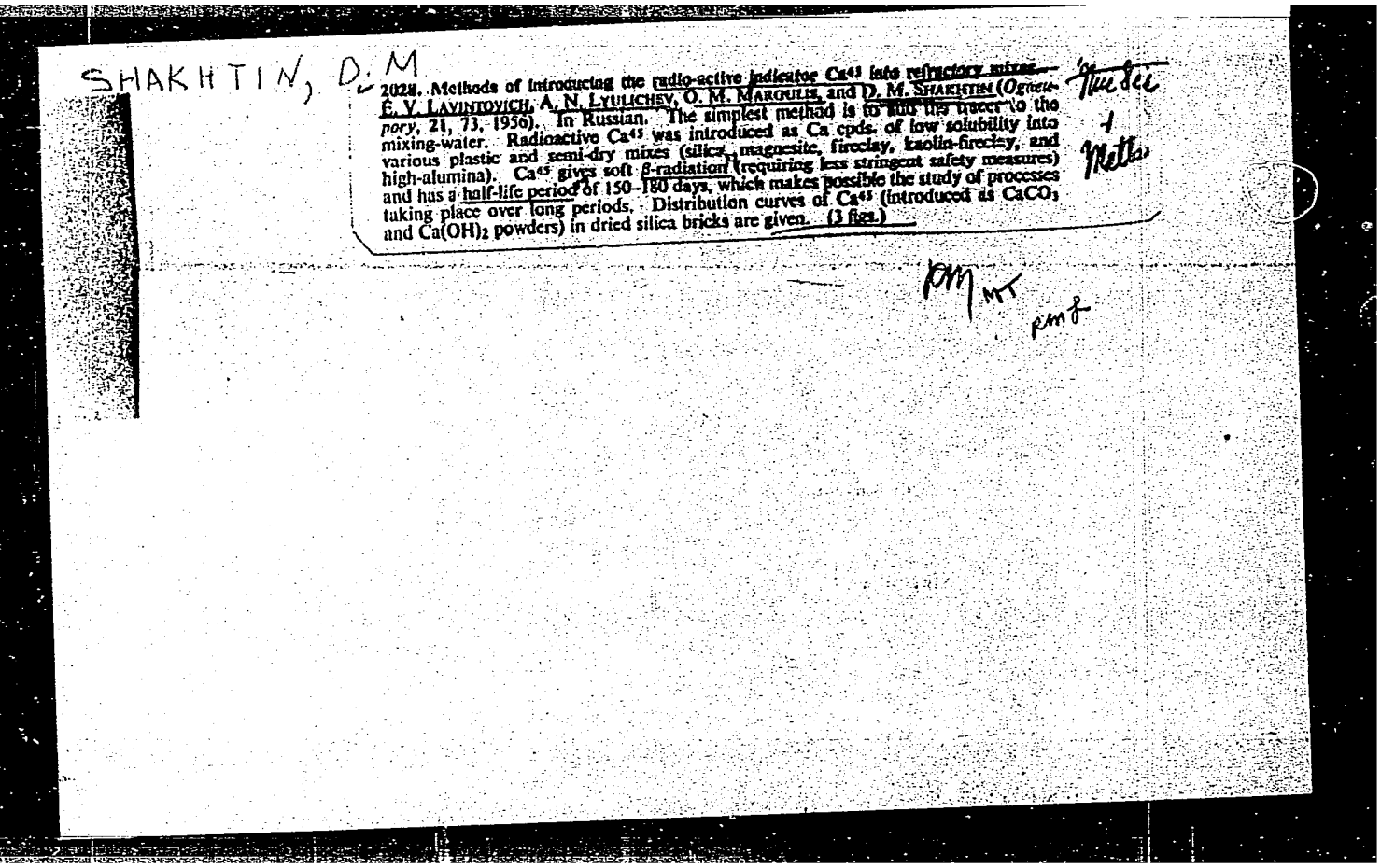
Abstract: The construction of a Kryptol laboratory furnace is described. Its useful capacity is 200 x 230 x 125 mm, the working temperature is 1450 to 1500°, the uniform heating of the working space is guaranteed in it and the expenditure of electric power is reduced. The furnace is used for burning chamotte and Dinas and for determination of additional linear changes in them.

Card : 1/1

SHAKHTIN, D.M.

Luminescent method of detecting fine cracks in refractories before and after firing. Zav.lab. 21 no.10:1200-1201 '55. (MLRA 9:1)

1.Vsesoyuznyy nauchno-issledovatel'skiyy institut ogneuporov.
(Refractory materials--Testing)



SHAKHTIN, D. M

2028. Methods of introducing the radio-active indicator Ca^{45} into refractory mixes. E. V. LAVINTOVICH, A. N. LYULICHEV, O. M. MARGULIS, and D. M. SHAKHTIN (*Ogneupory*, 21, 73, 1956). In Russian. The simplest method is to mix the tracer to the mixing-water. Radioactive Ca^{45} was introduced as Ca cpds. of low solubility into various plastic and semi-dry mixes (silica, magnesite, fireclay, kaolin-fireclay, and high-alumina). Ca^{45} gives soft β-radiation (requiring less stringent safety measures) and has a half-life period of 150–180 days, which makes possible the study of processes taking place over long periods. Distribution curves of Ca^{45} (introduced as $CaCO_3$ and $Ca(OH)_2$ powders) in dried silica bricks are given. (3 figs.)

Shakhtin, D.M.

Category : USSR/Atomic and Molecular Physics - Heat D-4

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6298

Author : Shakhtin, D.M.
Inst : All-Union Scientific Research Institute for Refractories.
Title : Instrument for Determining the Heat Conduction of Refractories.

Orig Pub : Zavod. laboratoriya, 1956, 22, No 7, 869-871

Abstract : Description of a setup which makes it possible to use bars 50 mm in diameter and 56 mm high in lieu of specimens of the usual size (bricks). The average test temperatures are raised to 900 - 1,000° (with the hot-end temperature being 1200--1250°). The measurement accuracy is ± 6%.

Card : 1/1

137-58-6-13802

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 371 (USSR)

AUTHORS: Lyulichev, A.N., Shakhtin, D.M.

TITLE Use of a Readioactive Isotope of Calcium in Studying the Work of Laboratory Mixers (Primeneniye radioaktivnogo izotopa kal'-tsiya dlya izucheniya raboty laboratornykh smesiteley)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. in-t ogneuporov, 1957, Vol 2, pp 93-98

ABSTRACT: A description of a method of control over mixing of charge material using radioactive Ca^{45} as a tracer. The work was done in a 600-g mixer with Z-shaped blades, on a 1-kg ceramic ball mill with silex balls, and on 3-kg crusher roll mills. The tests were run on a fine-grain silica batch with the grain composition, size of test samples, method of selection, and preparation of test samples being kept the same as in the case of working with magnetic powders. Into the silica batch ground to < 0.5-mm particle size, 1.5% $Ca(OH)_2$ or $CaCO_3$, tagged with Ca^{45}, 0.5% of sulfite-alcoholic mash, and 8.0% of water are introduced before mixing. During mixing by rollers or mixers the additives were introduced simultaneously in the form of

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137-58-6-13802

Use of a Radioactive Isotope of Calcium (cont.)

milk of lime During experiments with the ball mill the active additives were added in the form of a finely ground chalk powder. At definite intervals during the work of the mixer five 10-gr test samples were drawn from the mixed material. Cylindrical specimens of 20-mm diam were pressed from the test samples under 1000 kg/cm^2 pressure. The intensity of radiation of dried specimens was measured with an end-window counter TM-20 on a "B" type radiographic counting apparatus. A special film holder was made to ensure identical geometrical conditions. The scattering of the values of radioactive intensity, characterized by the magnitude of the mean square deviation ΔS, was chosen as the criterion of evaluation of the work of the mixers. From the blending curves plotted it is possible to determine the time of practical completion of mixing of the mass and of the homogeneity attained. The data obtained by radiographic measurements are confirmed as to the fact that the distribution of a tracer on addition of 0.3% $Ca(OH)_2$ is considerably less perfect than on addition of 0.6% $Ca(OH)_2$. It is deduced that the method can be used for a comparative study of various blending units, especially when it is necessary to distribute small amounts of additives in the mass.

1. Laboratory mixers--Effectiveness 2. Laboratory mixers--Test results S.S.
3. Laboratory mixers--Applications 4. Calcium isotopes (Radioactive)--Applications

Card 2/2

SHAKHTIN, D.M.

9

4E2c

1-KKL

1-GWM

Examination of the distribution of small additions of radioactive calcium to plastic masses. E. V. Levintovich, A. N. Lyuchev, O. M. Margulis, and D. M. Shakhtin (Inst. Refractory Materials, Kharkov). *Ogneupory* 22, 29-31(1957); cf. *C.A.* 51, 14228a.—The radioactive-isotope tracer method is used for the indexing of pressed refractory brick by using a $Ca^{45}Cl_2$-contg. $CaCl_2$ soln. in the batch water and its pptn. by NH_4 oxalate or soda to avoid a diffusion of the indicator to the brick surface. For cylindrical samples of different brick compns. (90% kaolin + 10% Chasov-Yar clay; 50% kaolin + Chasov-Yar clay; and 50% Al_2O_3 + 50% Chasov-Yar clay) the distribution of Ca^{45} on the surface and in the interior was carefully detd. by common Geiger-counter methods. There is only a slight enrichment on the surface if 1% of the oxalate precipitator soln. is applied. The batches (400 kg. in the industrial expts.) were indicated with the intensities of 500 mc./ton in a $CaCl_2$ soln. with 0.04 mc./ml. and a batch moisture of 30%. A sufficiently homogeneous distribution was realized for the Ca^{45} in the plastic brick masses after a twice- or thrice-repeated reprocessing by tamping, and in the hydraulic press, if drying is strictly avoided. W. Eitel

32-8-18/61

AUTHORS: Shakhtin, D.M., Vishnevskiy, I.I.

TITLE: Determination of the Thermal Conductivity of Fireproof Substances in the Vacuum. (Opredeleniye teploprovodnosti ogneuporov v vakuume)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol.23, Nr 8, pp. 927-929 (USSR)

ABSTRACT: The paper mentions as example the corresponding apparatus according to the method by Mc Quarrie (Am.Cera.Soc.) by which the thermal conductivity of fireproof pure oxides which are given the form of ellopsoids of revolution is determined in the vacuum. It is said that the use of such apparatuses is unsuitable for mass research work due to the complicated form which the samples must have. In this paper another apparatus is proposed (illustration given) in which the determination of the thermal conductivity of fireproof substances is carried out at high temperatures. The construction of this apparatus is based on the principle of a hollow cylinder with an absolute measurement of the stationary heat flow. Graphite and tantalum are suggested as materials for the performance of the research in the vacuum, in order to keep a high temperature in the experiments. Temperature of 1600-1700oC are suitable. (a description of the apparatus and its application is given). Aluminumoxide and zirconiumdioxide samples of various porosity are here used samples for experiments. The obtained linear relation yields the possibility to proceed up to maximum temperatures of the sample in measurements of thermal conductivity. It was found that samples with approximately the same porosity yield almost identical results. In-

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Determination of the Thermal Conductivity of Fireproof Substances in the Vacuum. 32-8-18/61

creased porosity reduces the thermal conductivity, but the character of the course of temperature of the thermal conductivity coefficient for a given material remains stable.
There are 3 illustrations.

ASSOCIATION: All-Union Scientific Research Institute for Fireproof Substances (Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov)

AVAILABLE: Library of Congress.

Card 2/2

AUTHORS: Kraftmakher, Ya. A., Lyulichev, A. N., SOV/32-24-7-51/65
Shakhtin, D. M.

TITLE: The Investigation of the Operation of Laboratory Mixers by Means of Magnetic Indicators (Izucheniye raboty laboratornykh smesiteley pri pomoshchi magnitnykh indikatorov)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 893 - 895 (USSR)

ABSTRACT: The apparatus constructed is based on the measurement of the magnetic conductivity of the samples in the low-frequency magnetic field. The instrument measuring the magnetic susceptibility was constructed by Ya.A.Kraftmakher. The measuring unit is an H-shaped armature on which three induction coils are arranged. The sample to be investigated is attached in such a way to the measuring unit that the magnetic flux passes through it; thus the inductive voltage in one of the coils is changed and the voltage of the measuring unit serves as a standard for the magnetic susceptibility of the sample. From the schematic representation of the apparatus given may be seen that a low-frequency generator, the measuring unit, a low- frequency amplifier, a detector, a lamp voltmeter as well as a visual in-

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dicator and a supply pack are assembled. The instrument has six measuring ranges of from 10^{-4} to 10^{-1} units of magnetic susceptibility in the CGSM system: the degree of mixing is determined by the measuring of the concentration of the magnetic powder in the samples taken from different places. The concentration of the magnetic powder is measured according to the magnetic susceptibility of the specimens pressed from the samples to be investigated. Granular sizes of quartzite of up to 0,5mm were used in the experiments; iron powder of 2,5% $Ca(OH)_2$, 0,5% sulfite alcohol vinasse, 8% water and 1,5% iron powder served as indicator. The results obtained were obtained from the mean value of the magnetic susceptibility and an equation; a diagram is given. There are 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov (All-Union Scientific Research Institute For Refractories)

80289
S/170/60/003/04/18/027
B007/B102

15.2200
5.4100

AUTHORS: Frenkel', A. S., Shakhtin, D. M., Kovalev, V. D.

TITLE: Measurement of the Diffusion Rate in Refractory Materials by Means of the Absorption Method

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 4, pp. 108-110

TEXT: In earlier papers (Refs. 1, 2, 3) the method of taking-off layers (Ref. 4) was used for the determination of the diffusion coefficient by means of radioactive isotopes. In the paper of Ref. 5 the absorption method was employed in the investigation of the autodiffusion of copper. This method was improved for the case of an application of isotopes with beta- and gamma-emission as indicators (Ref. 6). The determination of the diffusion coefficient by means of the improved method consists in measuring the activity of beta- and gamma-radiation before and after annealing. The respective solution of the general diffusion equation is used for the determination of the diffusion coefficient according to the formula (1). In the present paper this method was used by the authors for studying the diffusion of ferrous oxides in refractory chromium-magnesite materials and in the main components of the blast-furnace burden. The experiments are briefly

Card 1/3

Measurement of the Diffusion Rate in Refractory Materials by Means of the Absorption Method

described. When the measured absorption coefficients were used in calculating the diffusion rate, considerably lower values compared to those of the taking-off layers method were obtained. Analogous results were obtained in the papers mentioned in Refs. 8 and 9. The analysis of the results showed that the absorption coefficient μ of beta-radiation when measured according to the absorption method is not equal to the μ-value determined according to the direct method. An assumption is made concerning the reasons of such a divergence. In order to remove factors which cause this divergence and which cannot be estimated, the absorption coefficient μ of beta-radiation was determined by an indirect way, as in the paper mentioned in Ref. 12. The dependence of the mass absorption coefficient $M\varphi$ (cm^2/g) on the ratio of the integral intensities of beta- and gamma-radiation was determined by experiment for various refractory materials (Fig. 1). The experiments showed that it is possible to employ the convenient absorption method in the study of absorption processes in refractory materials. The temperature dependence of the diffusion coefficients of some refractory materials is given in Fig. 2 as an example of the application of the absorption method in determining the diffusion parameters. There are 2 figures and 12 references, 10 of which are Soviet.

C Card 2/3

S/131/60/000/010/001/002
B021/B058

AUTHORS: Frenkel', A. S., Shakhtin, D. M., and Kovalev, V. D.

TITLE: The Use of Tagged Atoms for Investigating the Diffusion of Iron Oxide in Refractory Chromium Magnesite Products

PERIODICAL: Ogneupory, 1960, No. 10, pp. 460 - 467

TEXT: The present paper gives the results obtained from a study of the process mentioned in the title. The method of removing layers by grinding and the absorption method were used for measuring the diffusion. The indicator was applied in the form of a fine-disperse suspension. A radioactive iron oxide preparation was used as diffusing material. The samples were fired in an electric kryptol furnace of the type ВНИИО-120 (VNIIO-120). Thin layers were ground off the samples after firing, and the remaining activity of the samples was measured. The radiation intensity was measured by radiometric systems of the type Б (B) and Б-2 (B-2). Counters of the type МСТ-17 (MST-17) and Т-25 БФЛ (T-25 BFL) were used for the β-radiation. The tangent of the angle of inclination of the straight line was graphically determined according to the method by P. L. Gruzin

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The Use of Tagged Atoms for Investigating the Diffusion of Iron Oxide in Refractory Chromium Magnesite Products

S/131/60/000/010/001/002
B021/B058

(Fig. 1). Positive results were also obtained with the absorption method. The characteristics of the refractory products investigated are listed in Table 1. The values of the diffusion coefficients for samples from purified chromite may be seen from Table 2 and their temperature dependence from Fig. 2. The temperature dependence of the diffusion coefficients for chromium magnesite samples is mentioned in Fig. 3, and reference is made to the paper by V. V. Goncharov. The calculated phase composition of the refractory magnesite products investigated is given in Table 3. The temperature dependence of the diffusion coefficients of refractory magnesite products is shown in Fig. 4 and that of the refractory products investigated in Fig. 5. The authors state in conclusion that the measurements of the diffusion coefficient were checked and defined by the method of grinding-off and that of the absorption method. Both methods produced conforming results. There are 5 figures, 3 tables, and 11 references: 9 Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

Card 2/2

FRENKEL', A.S.; SHAKHTIN, D.M.; KOVALEV, V.D.

Using tagged atoms in studying the diffusion of the ferric oxide in chromemagnesite refractories. Ogneupory 25 no.10:460-467 '60. (MIRA 13:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Radioactive tracers) (Refractory materials)

21(4); 28(5); 15(2)
AUTHORS: Shakhtin, D. M., Kovalev, V. D.

S/032/60/026/02/020/057
B010/B009

TITLE: Absorption of Co^{60} Beta Radiation in Refractories

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol 26, Nr 2, pp 173 - 175 (USSR)

ABSTRACT: The coefficients of the absorption of beta rays in various refractories (Cr_2O_3, Al_2O_3, Fe_2O_3, chromite, chromium magnesite) were determined and the influence of the geometrical factors upon the absorption coefficients was investigated by means of aluminum and mica laminas. The source of radiation was a thin layer of a Co^{60} preparation. A BFL-25 end window counter was used for recording. The operating distance between source of radiation and counter was 5 cm. The most accurate exponential function of the beta ray absorption was obtained (Fig 2, Curves) when the ray absorber was placed twice as far from the counter as from the radiation source (Fig 1). The present experiments were therefore conducted with such an arrangement. The values of the absorption coefficients obtained with the above materials are given (Fig 3); they exhibit

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Absorption of Co^{60} Beta Radiation in Refractories S/032/60/026/02/020/057
B010/B009

a maximum error of 1%. Simultaneously the absorption coefficients of type R_mO_n compounds were calculated by means of an equation from data furnished by V. I Baranov (Ref 5) and compared with the measured values (Table 1). Part of the measured values differ greatly from the calculated values. If the exact absorption coefficient of a chemical compound is required it has therefore to be established experimentally. The absorption coefficients of the refractory materials (chromite, chromium magnesite) calculated from the absorption coefficients of the oxides contained in them agree satisfactorily with the experimental data (Table 2). There are 3 figures, 2 tables, and 6 references, 4 of which are Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

Card 2/2

SHAKHTIN, D.M.; LEVINTOVICH, E.V.

Determination of the specific surface of clays and kaolins by means of radioactive tungsten [with summary in English]. Koll.zhur. 23 no.4:495-498 Jl-Ag '61. (MIRA 14:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov, Khar'kov.
(Clay) (Adsorption) (Tungsten--Isotopes)

S/081/63/000/002/038/088
B156/B144

AUTHORS: Shakhtin, D. M., Levintovich, E. V.

TITLE: Radioactive isotopes used for testing the grinding of magnesite refractory substances

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1963, 370, abstract 2M25 (Sb. nauchn. tr. Ukr. n.-i. in-t ogneuporov, no.5 (52), 1961, 336-341)

TEXT: The basis of this method of testing is the determination of the amount of radioactive substance adsorbed by the surfaces of grains of ground magnesite; the testing process consists of the following stages: determination of the specific surface area by adsorptive capacity, i.e. by the number of mg of the radioactive substance adsorbed by 1 g of substance; this is found from the difference between the radioactivity of solutions before and after adsorption. The specific surface area of burnt magnesite was determined using an alcohol solution of $CaCl_2$ and a water-alcohol solution of sodium tungstate, labeled with the radioactive isotopes

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LEVINTOVICH, E.V.; SHAKHTIN, D.M.; KULIK, A.I.; LOGACHEV, M.S.; MIROSHNICHENKO, V.Ya.; SLAVGORODSKAYA, Ye.Ya.

Determining the weight by volume and density variations of a glass bar by the absorption of gamma rays. Ogneupory 28 no.1: 17-21 '63. (MIRA 16:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Levintovich, Shakhtin). 2. Chasov-Yarskiy kombinat ogneupornykh izdeliy (for Kulik, Logachev, Miroshnichenko, Slavgorodskaya).
(Refractory materials--Testing)
(Gamma rays—Industrial applications)

LEVINTOVICH, E.V.; SHAKHTIN, D.M.; MALIKOVA, T.V.; RUTMAN, D.S.

Determining the apparent porosity of refractories by their volumetric weight. Ogneupory 29 no.1:21-24 '64. (MIRA 17:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Levintovich, Shakhtin). 2. Podol'skiy zavod ogneupornykh izdeliy (for Malikova, Rutman).

ACCESSION NR: AP4033622 S/0032/64/030/004/0501/0502

AUTHORS: Shakhtin, D. M.; Levintovich, E. V.; Prasko, V. S.; Alekhin, A. I.; Lerner, A. I.; Kulik, A. I.; Zheltobryukh, V. P.; Vashchenko, V. P.

TITLE: Apparatus for determining the density of glass beams by gamma ray absorption

SOURCE: Zavodskaya laboratoriya, v. 30, no. 4, 1964, 501-502

TOPIC TAGS: measuring apparatus, glass property, density measurement, gamma ray absorption

ABSTRACT: Apparatus is described for the nondestructive measurement of the density of glass beams by measuring the attenuation of gamma rays passing through the material. The source of gamma rays is Co^{60} with an activity of 20 mg-equiv of radium shielded by 20 cm of lead. The detector is a scintillation counter with a 40 x 40 mm NaI crystal. The density of products 250-350 mm thick can be determined within 0.01 gm/cm^3 in 3-4 minutes. Orig. art. has: 1 diagram.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov i Chasov-Yarskiy kombinat ogneuporny*kh izdeliy (Ukrainian Scientific Research Institute of Refractory Materials and Chasov-Yarskiy Combine of Refractory Products)

SUBMITTED: 00 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: MT NO REF SOV: 000 OTHER: 000

Card 1/1

L 61817-65 EWG(j)/EWP(e)/EWT(m)/EWP(w)/EPF(c)/EWP(i)/EPF(n)-2/EWG(m)/EWA(d)/T/EWP(t)/EWP(b) Pr-4/Ps-4/Pu-4 IJP(c)/AEDC JD/JG/AT/WH

ACCESSION NR: AP5018460 UR/0131/65/000/007/0037/0041

666.76:621.3.011.2

AUTHOR: Shakhtin, D.M.; Levintovich, E.V.; Pivovar, T.L.; Yeliseyeva, G.G

TITLE: Electrical conductivity of refractory oxides at high temperatures

SOURCE: Ogneupory, no. 7, 1965, 37-41

TOPIC TAGS: refractory oxide, electrical conductivity, zirconium refractory, aluminum refractory, electrical resistance, magnesium refractory

ABSTRACT: The article deals with the temperature dependence of the electrical conductivity of refractory materials prepared from oxides of aluminum, magnesium, calcium, and zirconium (see Fig. 1 of the Enclosure). The measurements were carried out at 900-2300C in a special furnace, both in an inert medium (argon or nitrogen) at 1 atm and in a vacuum. The experimental conditions employed permitted the measurement of high electrical resistances at high temperatures. The maximum resistance was displayed by samples containing 99.67 and 98.52% MgO. The presence of ferric oxide decreased the resistance of the materials. The influence of porosity on the latter was also investigated. In order of increasing electrical resistivity, the materials can be arranged as follows: zirconium dioxide stabilized with calcium oxide

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ACCESSION NR: AP5018460

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< calcium zirconate < strontium zirconate < calcium oxide, < spinel < magnesium oxide < aluminum oxide. As a result of the study, optimum conditions were selected for determining the electrical resistance of various refractories. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

SUBMITTED: 00 ENCL: 01 SUB CODE: MT

NO REF SOV: 010 OTHER: 002

Refractory Compounds 27

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L 61817-65

ACCESSION NR: AP5018460

ENCLOSURE: 01

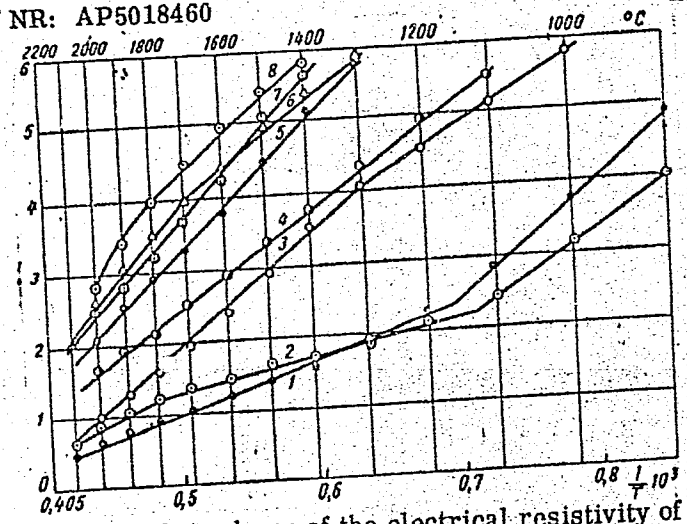

Fig. 1. Temperature dependence of the electrical resistivity of certain refractories: 1 - zirconium dioxide stabilized with 10% calcium oxide; 2 - zirconium dioxide stabilized with 6% calcium oxide; 3 - calcium zirconate; 4 - strontium zirconate; 5 - calcium oxide; 6 - spinel; 7 - magnesium oxide; 8 - aluminum oxide.

Card 3/3 glk

SHAKHTINSKIY, G.B.; ALIZADE, Z.I.

Reduction of the Dashkesan iron ore with Karadag natural gas. Azerb. khim.zhur. no.4:167-169 '63. (MIRA 17:2)

[redacted], I. A.

"Irritants of low intensity in industry and their effect on the organism."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

L 36208-66
ACC NR: AP6011664 SOURCE CODE: UR/0106/66/000/004/0025/0031

AUTHOR: Shakhtarin, B. I.

ORG: none

TITLE: Filtering capability of the phase-lock automatic frequency control

SOURCE: Elektrosvyaz', no. 4, 1966, 25-31

TOPIC TAGS: ~~phase-lock~~, signal noise separation, automatic frequency control, phase lock, communication system

ABSTRACT: Based on an analysis of asymptotic solutions of the Kolmogorov equation (small fluctuation of error signal), the linear and quasi-linear approximations are developed in the entire range of initial phase differences ("detuning") and signal-to-noise ratio. J. A. Develet (IEEE Trans., SET-9, 1961, no. 1) developed a formula for the error-signal dispersion with zero initial phase difference; this article presents a plot of this dispersion vs. initial phase

Card 1/2 UDC: 621.396.668

L 36208-66
ACC NR: AP6011664

difference, with a fixed signal-to-noise ratio. A formula is developed for the limit signal-to-noise ratio which determines, for a specified initial phase difference, the near-unity probability of phase jumps in the phase-lock system. The quasi-linear method permits calculating the error-signal dispersion with practically the accuracy obtainable with the nonlinear method. Orig. art. has: 5 figures and 36 formulas.

SUB CODE: 17, 09 / SUBM DATE: 15Apr65 / ORIG REF: 008 / OTH REF: 002

Card 2/2 *ulb*

SHAKHTMEYSTER, I. YA.

Skin - Diseases

Study of the therapeutic value of nigrine in some forms of pyoderma. Vest. ven. i derm. no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

SHAKHT EYSTER, I. YA.

Gastric Juice

Role of the stomach in interstital protein metabolism and secretion of the gastric glands in eczema. Vest. ven. i derm. no. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 Unclassified.

SHAKHTMEYSTER, I.Ya., kandidat meditsinskikh nauk; TOPORKOV, N.P.

Liver function in patients with syphilis. Vest.ven. i derm. 30 no.2:49 Mr-Ap '56. (MLRA 9:7)

1. Iz Sverdlovskogo oblastnogo kozhno-venerologicheskogo instituta.
(LIVER--SYPHILIS)

SHAKHTMEYSTER, I.Ya., kand.med.nauk, POTEKAYEV, N.S., aspirant

Vitamin B6 in the treatment of certain dermatoses [with summary in English]. Vest.derm. i ven. 32 no.4:27-29 Jl-Ag '58 (MIRA 11:10)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zav. - chlen korrespondent AMN SSSR prof. V.A. Rakhmanov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

(PSORIASIS, ther.
vitamin B6 (Rus))
(NEURODERMATITIS, ther.
same (Rus))
(DERMATITIS SEBORRHEICA, ther.
same (Rus))
(VITAMIN B6, ther. use
dermatitis seborrheica, neurodermatitis & psoriasis
(Rus))

SHAKHTMEYSTER, I.Ya., kand.med.nauk

Role of the stomach in nitrogen metabolism in eczema patients. Sbor. nauch. rab. po lepr. i derm. no.13:87-90 '59. (MIRA 14:6)
(NITROGEN METABOLISM) (ECZEMA)
(STOMACH--SECRETIONS)

ROMANENKO, G.F., kand.med.nauk; SHAKHTMEYSTER, I.Ya., kand.med.nauk

Importance of the Thorn test in treating certain skin diseases with ACTH. Vest.derm. i ven. 33 no.3:77-78 My-Je '59.
(MIRA 12:9)

1. Iz kafedry kozhnykh i venericheskikh bolezney I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.
(SKIN--DISEASES) (ACTH)

SHAKHTMEYSTER, I.Ya., kand.med.nauk; CHERTKOV, I.L., kand.med.nauk; KARPUSHKIN, V.P.

State of the properdin system in patients with syphilis. Vest. derm. i ven. 37 no.1:62-65 Ja'63. (MIRA 16:10)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zav.-chlen korrespondent AMN SSSR prof. V.A.Rakhmanov) I Moskovskogo ordena Lenina meditsinskogo instituta i Radiobilogicheskoy laboratorii (zav. - prof. M.O.Raushenbakh) TSentral'nogo instituta gematologii i perelivaniya krovi.
(SYPHILIS) (PROPERDIN)

SHAKHTMEYSTER, I. Ya., kand. med. nauk; ROGOV, A.A., kand. med. nauk

Morphological manifestation of retarded allergy in eczema and neurodermatitis; histochemical study. Vest. derm. i ven. 37 no.12:11-15 D '63 (MIRA 18:1)

1. Kafedra kozhnykh bolezney (zav. - chlen korrespondent AMN SSSR prof. V.A. Rakhmanov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova i TSentral'naya nauchno-issledovatel'skaya laboratoriya imeni S.I. Chechulina (zav. - kand. med. nauk A.S. Chechulin).

ROMANENKO, G.F., kand. med. nauk; SHAKHTMEYSTER, I.Ya., kand. med. nauk

Treatment of eczema patients in health resorts. Vest. derm. i ven. 38 no.8:68-70 Ag '64. (MIRA 18:8)

1. Kafedra kozhnykh i venericheskikh bolezney (zav.- chlen-korrespondent AMN SSSR prof. V.A. Rakhmanov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

BELOSHAPKO, P. A;SHAKHTMEYSTER, S. Ya.

Simple method of roentgenologic measurement. Akush. gin., Moskva no. 2:35-38 Mar-Apr. 1952. (CLML 22:2)

1. Professor for Beloshapko; Candidate Medical Sciences for Shakhtmeyster. 2. Of the Institute of Obstetrics and Gynecology (Director -- L. G. Stepanov), Ministry of Public Health USSR.